

OCTOBER 1992

3-2-1

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“MONSTERS”
IN YOUR
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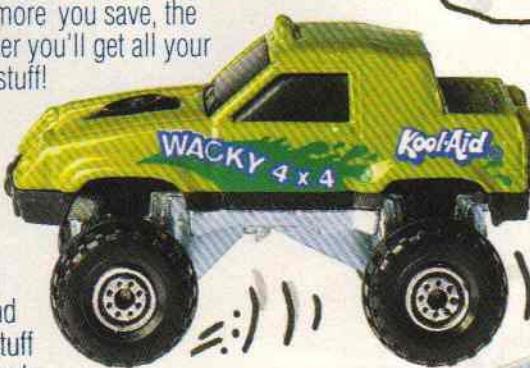
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General Excellence



Award Winner/Feature

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CONTENTS

FEATURES

6 "How'd They Do That?"

Animators Use
Computers to Make
Movie Magic

12 Top 10 Myths About Christopher Columbus and His Voyages

16 Winging It: CONTACT Gets a Bird's-Eye View of the Zoo

22 Eek! Your House Is Bugged... But Don't Let These "Monsters" Scare You

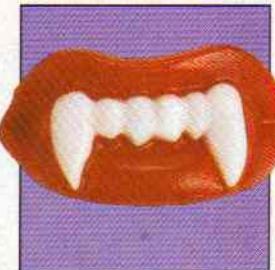
34 For the Birds: Build Your Own Bird Feeder

SQUARE ONE TV

35 Addams Family: This Puzzle Is a Scream!

36 Sticky Treat Puzzles

DEPARTMENTS



36

TNT Newsblasts 2

Any Questions? 4

Mail 11



16

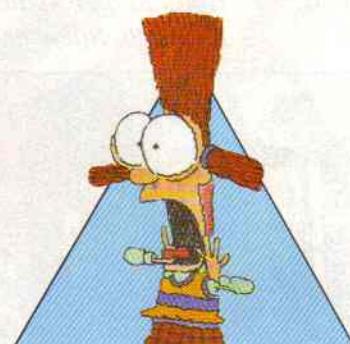
The Time Team 28

Basic Training 31

Factoids 32

Extra! 38

Did It 40



38

ON OUR COVER

Magnified 190 times, this dust mite lives in your house—but it's a harmless roommate. Photo © Peter Arnold, Inc./David Scharf

TNT **Humongous Fungus**

It's...it's...the blob! It lurks just below the surface of a forest in Michigan. It feeds off rotting organic material and tree roots. It's already grown 40 acres. And it's still growing.

But, hey, don't freak. This underground blob is just an overgrown fungus. Even though it's one of the world's largest living organisms, it's harmless.

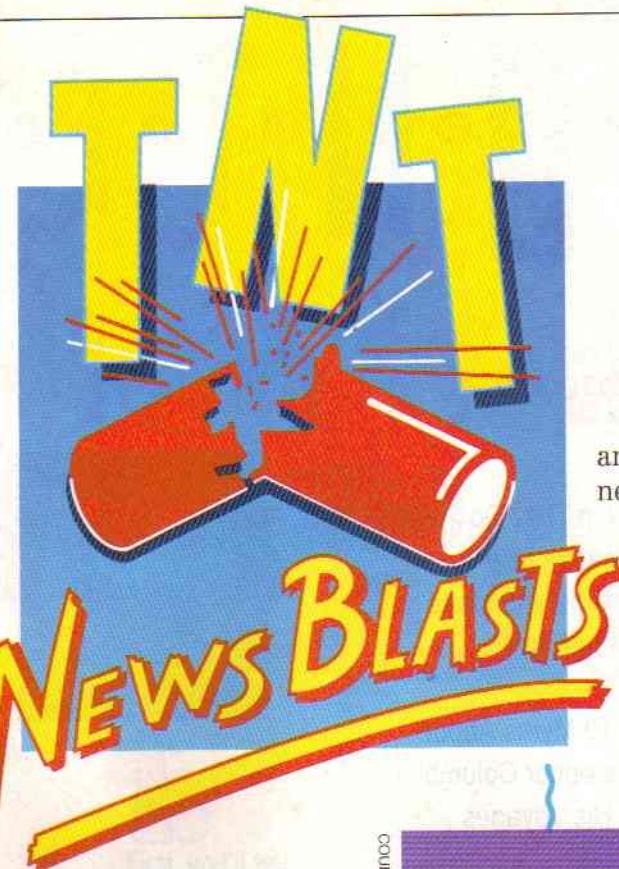
Myron Smith, a botanist, and his team recently discovered the fungus. (A fungus is a simple plant that grows on animals and other plants.) But they haven't actually seen it—at least not the whole thing.

So how do they know how big it really is? They took samples of fungus from different areas of the forest. They found that all the samples were identical. (If any of the samples had come from another fungus, it would have different genes.) So, the samples had to be part of

one big blob.

And the 220,000-pound blob just gets bigger. It creeps along underground at about eight inches a year. "Based on that growth rate," Smith figures, "it's about 1,500 years old." Now that's old mold!

Story suggested by Cody Massing, Sedro-Woolley, WA; Holly Meyer, Wausau, WI; and Iva Hieb, Spencer, IN.



COURTESY AT&T

Get the Picture?

Maybe you can't reach out and touch someone. But a new phone lets you at least see the person on the other end of the line.

The VideoPhone is the first home telephone to send and receive color video pictures.

The 3.3-inch screen has



a built-in camera and lens. The camera focuses on objects up to nine feet away. This means that you can move back from the screen to let four or five of your friends in on the action.

To "screen" your calls, just press a button and neither picture will appear. Before calling, a self-view button lets you check out how you look.

For it to work, though, both the caller and the person being called must have a Videophone. And there's one more hang-up: Each phone costs \$1,500!

Story suggested by Amanda Kirchhoffer, Wilbraham, MA; and Mickey Tran, San Jose, CA.

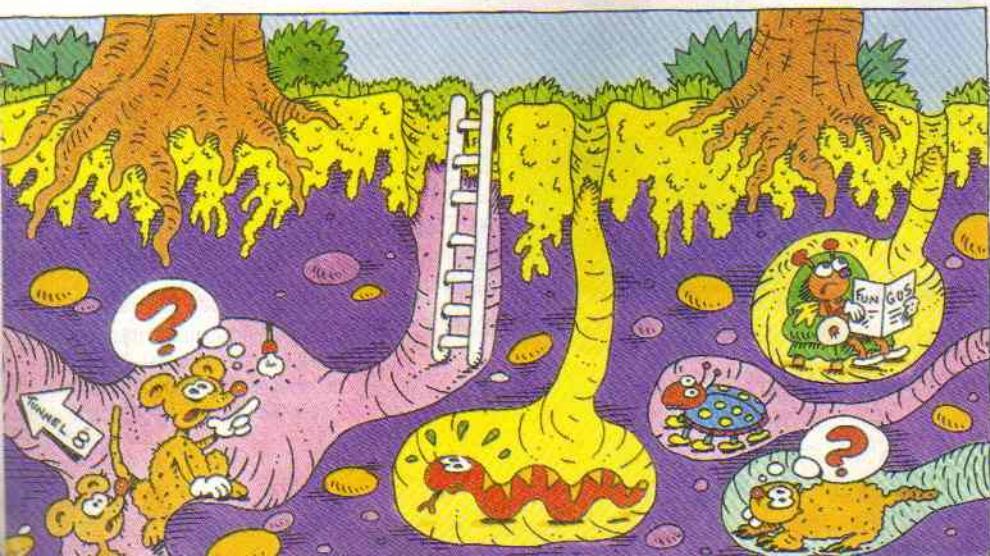


ILLUSTRATION BY FRED SCHRYER

Eye Spy

Yikes! It's not a Halloween mask. But biologist Joanna Burger does wear it whenever she wants to look spooky—to iguanas, that is.

Burger isn't trying to be mean. It's just part of her experiment to test the iguana's ability to spot danger.

Iguanas can't spend all their energy running from possible enemies. So they have to judge when they need to make a run for it.

How do they do this? According to Burger, iguanas know that when an animal



eyeballs them, it usually means trouble. So she thinks they keep a watchful eye on the eyes of would-be predators.

Burger noticed that when she stared directly at the iguanas as she approached, they fled more quickly. They really took off when she wore her "large eye" mask.

Burger now wants to find out whether iguanas will flee as quickly if they don't see the eyes of an approaching animal. So she plans to approach them wearing a wig over her face. Talk about not seeing eye to eye!

Chain Gang

Okay. You've seen a bicycle built for two. But a bicycle built for eight?

Artist Eric Staller built the seven-foot-wide *Octos* to carry eight riders on a doughnut-shaped aluminum

frame. The bike glides along on four motorcycle wheels.

Everyone pedals, but only the driver steers. The *Octos* is no slow-moving vehicle, though. With strong pedalers, it can hit a speed of 50 mph!



Ghost Alert

What are these six kids up to? They're about to meet some cool characters, solve a mystery and maybe rescue a friend in trouble.

But wait. There's someone missing from this group shot: A very friendly and very invisible ghost!

The ghost, who can only communicate in writing, is the seventh star in an excellent new TV show called *GHOSTWRITER*. It airs on Sundays, at 6 p.m. Watch for it beginning in October on PBS.



Check local TV listings for exact time and date in your area—and get with the program!



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you heard the story.)

Send to:
TNT
3-2-1 CONTACT
Magazine
1 Lincoln Plaza
New York, NY 10023

ANY QUESTIONS?

By Christina Wilsdon

**H
O
W**

DO TEENAGERS GET PIMPLES?

Getting zits is really the pits. But pimples aren't just a teenage problem. Many adults get them, too.

The same stuff that keeps your skin smooth and healthy can also cause pimples. That stuff is your body's natural skin oil. It's made by tiny glands that sit inside your skin next to the roots of hairs.

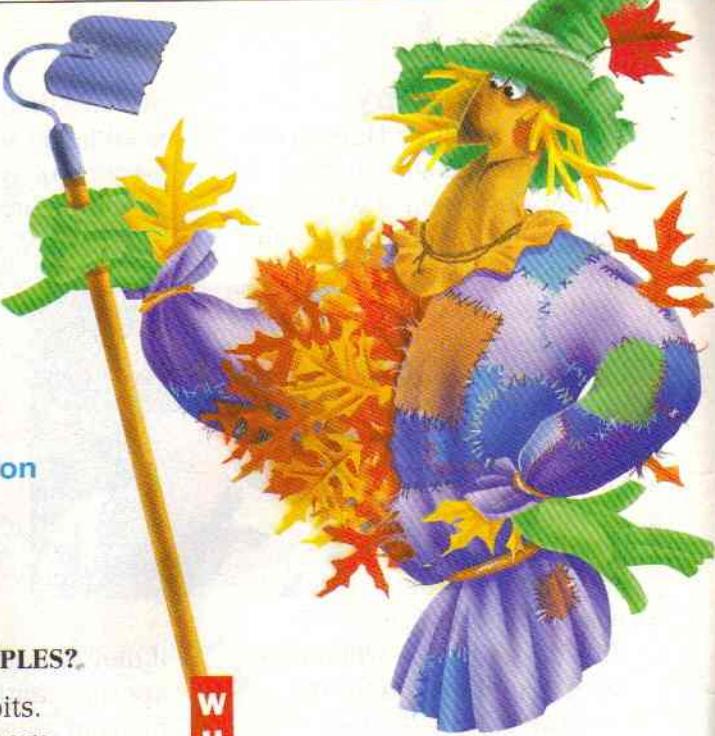
Each gland pours oil into a pit, or "follicle," that holds a hair. Then the oil empties out of a tiny hole, or "pore," onto the skin.

But sometimes these glands make too much oil. This clogs the follicle. Then germs start growing in the oil. That spells "infection"—and soon a red, swollen bump appears.

Teenagers suffer from pimples because their bodies are busy making "hormones"—chemicals that make it possible for kids to grow into adults. These hormones also cause skin glands to pump out more oil.

Doctors often prescribe skin medicines and pills to fight pimples. Healthful foods, water and rest help blitz zits, too.

Question sent in by Patricia Pierre, Brooklyn, NY.



**W
H
Y**

DO LEAVES CHANGE COLOR IN THE FALL?

Leaves are green during the spring and summer—but underneath that green, they're also orange, yellow or other colors.

The green that blots out those colors is a chemical called "chlorophyll" (say: *KLOR-oh-fil*). Chlorophyll in the leaf helps turn the energy of sunlight into food.

In fall, the chlorophyll breaks down when the nights become cooler and the days become shorter. Then the yellow and orange colors show through. In some kinds of leaves, new colors might form in the leaf as it dies, turning them red or purple.

This color change only happens in trees that lose their leaves in cold climates. (Trees in the tropics stay green.) These trees don't need to make food during the cold season, so they don't need green leaves anymore.

Not all trees shut down for winter. Evergreen trees, such as pines and fir trees, stay green all the time. They're busy turning sunlight into food all winter long.

Question sent in by Rosemary Kenn, Sacramento, CA.



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But remember this: No matter what you decide, the Grrreat Free Gifts are yours to keep—FREE! Return the card or coupon today!

Free Gift Certificate



Yes! Please send me the \$15.00 in Free Gifts. Also send my first regular set of Wildlife Cards for only \$2.99 plus delivery, and enroll me as a trial member according to the terms in this ad.

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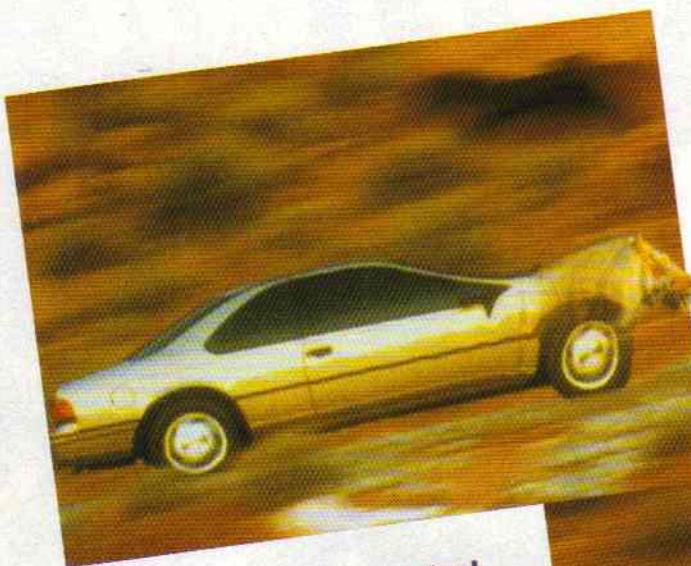
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If card is missing, complete and mail to:

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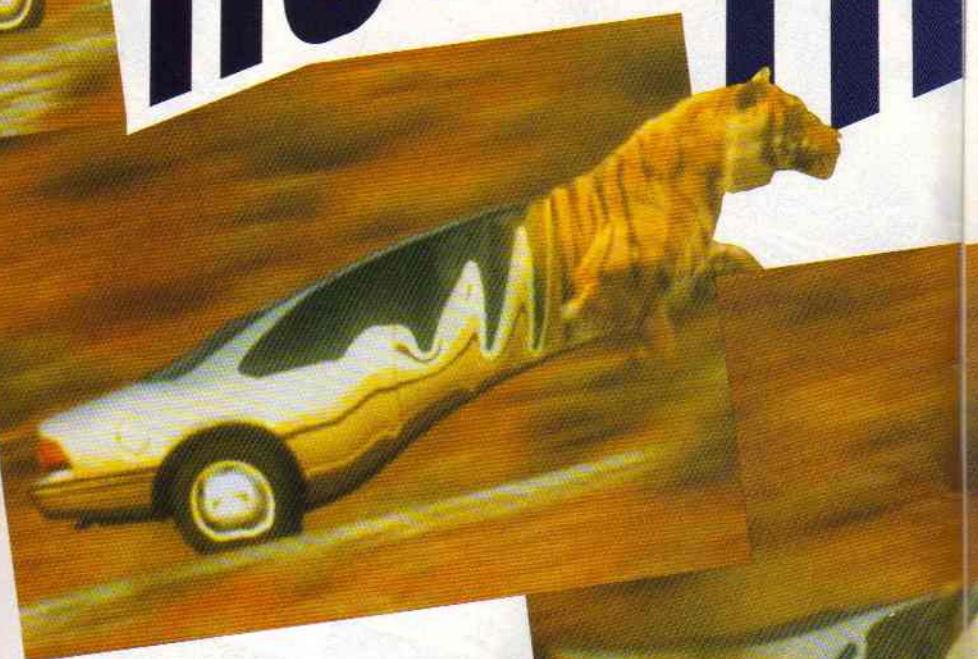
ANIMATORS USE COMPUTER



Talk about a roaring engine!
In this TV ad, morphing
turns a car into a tiger.

PHOTO: PACIFIC DATA IMAGES

HOW'D TH



Q: How do you turn a car into a tiger?

A: Use a computer.

Yes, you *can* turn a car into a tiger. Just ask the computer animators at a company called Pacific Data Images. They created a TV commercial in which a racing auto magically becomes a running tiger.

You can also turn a man into a woman. Animators did that for Michael Jackson's music video "Black or White." In one part of the video, the faces of 13 dancers flow into each other. A blond man becomes an Asian woman who becomes a black man and so on—all in a matter of seconds.

Of course, these changes didn't really take place. As in the movie *Terminator 2*, the chrome robot "T-1000" didn't actually become a human. But, thanks to new computer technology, these changes from one thing to another look real.

Computers Get Real

Computer animation is everywhere these days. In fact, it's hard to find a recent cartoon or movie

where at least one object isn't drawn by a computer. For example, computers created the "Klingon" blood floating in *Star Trek VI* and the whirling scrub brushes in a bathroom cleanser TV commercial. You may not have noticed they were drawn by computers—which is just the way computer animators like it.

Eric Armstrong is a computer animator for Industrial Light and Magic. This company is famous for making great special effects for such movies as *Close Encounters of the Third Kind* and *Star Wars*.

Armstrong started out as a traditional animator. When he drew cartoons for *Care Bears* and *Ducktales*, he did them by hand. But the first time he saw some computer animation, he knew this

R S T O M A K E M O V I E M A G I C

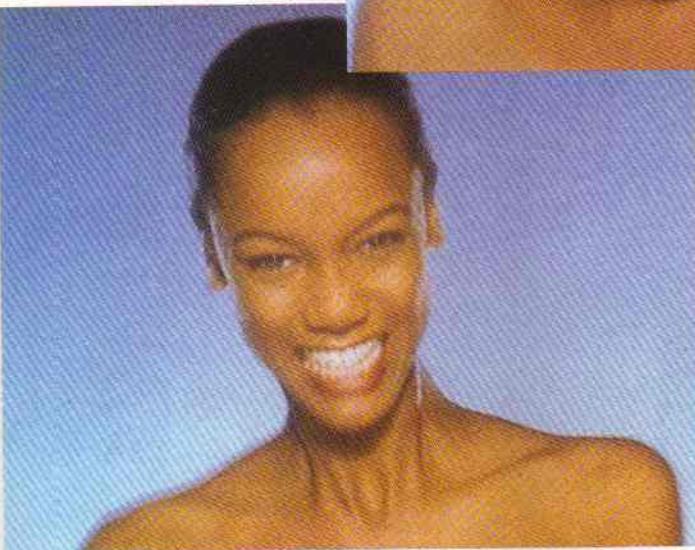
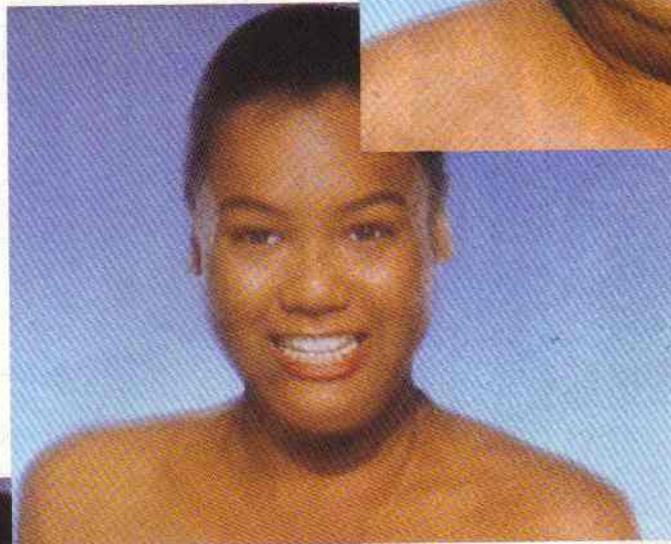
By Richard Chevat

EY DO THAT?



A man becomes a woman right
before your eyes in the Michael
Jackson video "Black or White."

PHOTOPACIFIC DATA IMAGES



was for him!

"With the computer, there are no limits," Armstrong told CONTACT. "You can make a character that looks as realistic as a photo. And we are constantly coming up with new ways of doing things with animation—things that no one has ever done before. What we do is fool the eye, make it look like a person can fly or walk through a wall." Or make water look like it's alive, as they did with the "pseudopod" creature in the movie *The Abyss*.

But, says Armstrong, it's still the animator who does the creating, not the computer. "The computer is just a fancy pencil. The animator has to tell it what to do."

Filling In the Blanks

Even with computers, the first step in creating animation characters is to sit down and draw. But these high-tech artists do it on a computer screen instead of on a piece of paper. And instead of making a flat drawing that only shows a mouse or duck on one side, computer software lets you see the character from every angle: front, back, top and bottom.

To create a real-looking image, the animator first draws a "wire frame." On the computer screen, this looks like a wire sculpture of an animal, person or object. Using a computer mouse or a keyboard, the animator turns the wire frame in any direction and makes it move. Once the basic shape is finished, the animator adds features like eyes, a nose and a mouth—until the figure is completed. Now the computer has a record of what that character looks like from every angle and some basic ways it can move.

If animators want the character to walk across the screen, they might draw the character at the beginning, middle and end of the walk.

In the past, human artists drew the dozens of pictures that would complete the picture of the walk. Nowadays, the computer draws all the

in-between pictures—and does it a lot faster.

But sometimes the computer doesn't get it quite right. "We'll play back what the computer's done and see what's working and what isn't," says Eric Armstrong. "Then we might change one frame, add a new picture and run it through the computer again."

Morphs for Michael

The hot news in computer special effects is something called morphing (say: *MOR-fing*). Morphing comes from the word "metamorphosis" (say: *met-a-MORE-fo-sis*). The word means a change of one thing into another. A caterpillar changing into a butterfly is an example of metamorphosis. And that's what morphing is all about: showing things change right before your eyes. The amazing part about morphing is that it can even make photographs change.

The first movie to use morphing was *Willow*. It showed a woman turning into a tiger. Today, lots of movies use morphing, including *Terminator 2* and *Star Trek VI*. It's also used in TV commercials. Like the ad for the man whose block-shaped face changes to normal.

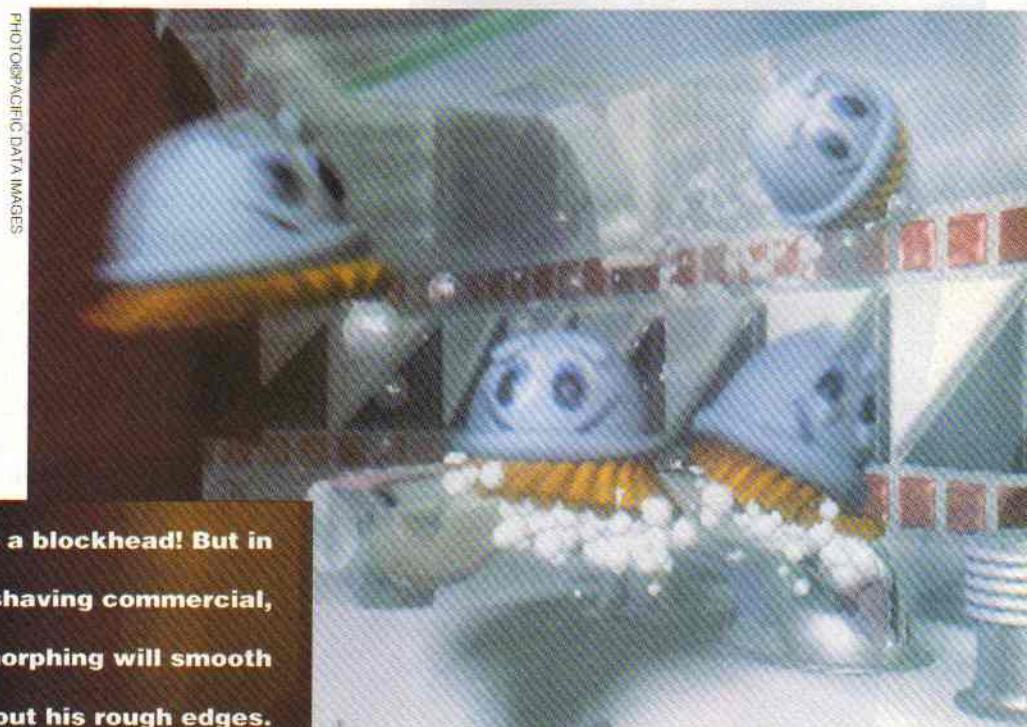
Morphing is the secret behind Michael Jackson's "Black or White" music video. In it, the dancers' faces change so smoothly and quickly that it

looks like one person is growing into the next.

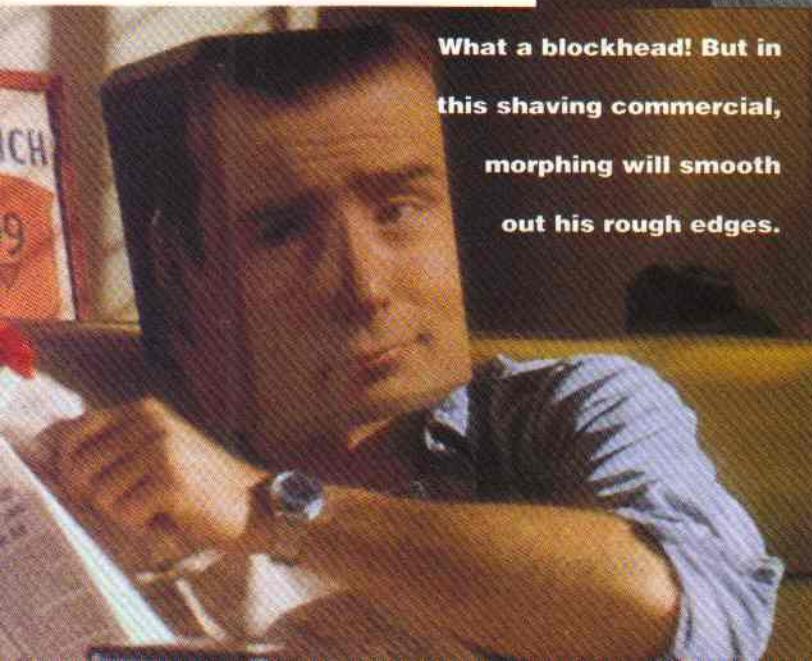
To create the sequence in the music video, a camera crew first shot film of the 13 dancers. The film was transferred to video and then stored in the computer's memory. Next, the film director and the animators chose the shots of the dancers they wanted to use and put them in order. Now they were ready to morph.

On the computer, animators placed the two faces to be morphed on top of each other—eyes over eyes, mouths over mouths and so on. Then, working right on the screen, they played with the pixels of the photographs. (Pixels are the dots on the screen that make up the photos.) Pixel by pixel, they melted the faces' features into each other.

Animators don't have to make every frame of the film. They just make a few key changes and the computer does all the rest. In the final version, it seems like every detail of the faces completely blends together. ☺



Computer animators brought these cartoon scrub brushes to life for a TV commercial.



What a blockhead! But in this shaving commercial, morphing will smooth out his rough edges.

PHOTO © PACIFIC DATA IMAGES

Sounds like hard work? It is! One minute of morphing in the video took 10 weeks to create on computer. But the results are worth it.

Old monster movies also showed people changing shape. But they look fake, says George Bruder, a computer animator at Pacific Data Images. Bruder told CONTACT, "Morphing isn't foggy or out of focus like the old werewolf movies, where they'd shoot a few frames of the actor, then put fangs in his mouth and shoot a few more frames, then put hair on his face and shoot some more. Morphing is completely smooth."

No More Actors?

Animators have gotten so good, they can make just about anything seem real—except humans. So far, people created on the computer still seem like, well, people created on a computer. Part of the problem is that computers make the skin tone and

PHOTO © INDUSTRIAL LIGHT & MAGIC

Animators created the evil robot in Terminator 2 on a computer. They even drew the reflections on its chrome body.

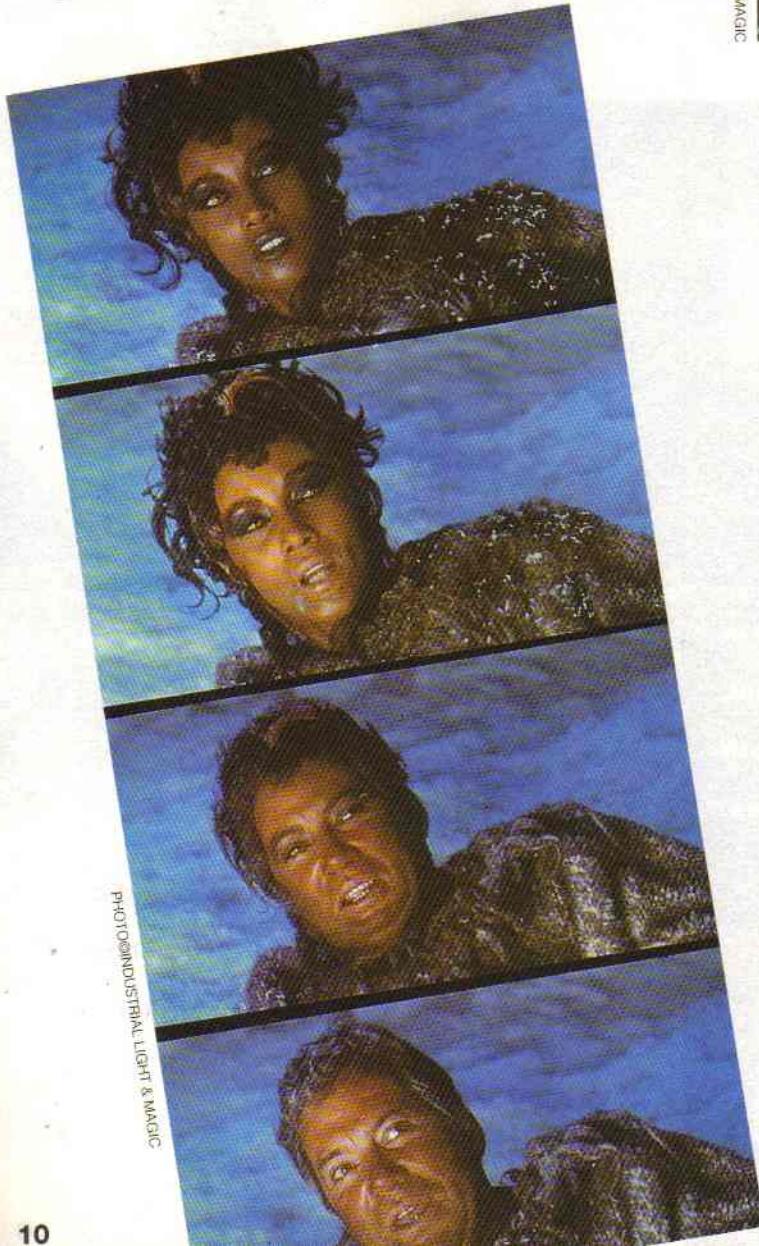
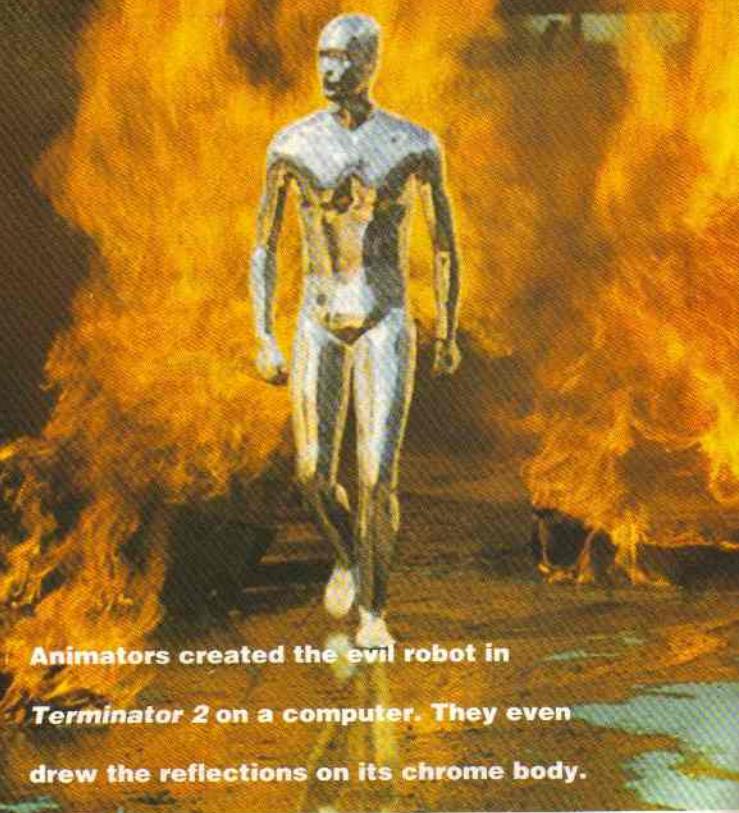


PHOTO © INDUSTRIAL LIGHT & MAGIC



texture too even and smooth.

It's also hard to make the animation move like a human. Bruder says, "A computer just can't get all the little details right. Not yet, anyway."

But that's not the only problem, thinks Eric Armstrong. "Some people say we'll be able to bring old movie stars to life. Maybe make a new movie with a computer version of an old star like Marilyn Monroe. We could make something that looks like her and sounds like her, but it will never have her personality."

Even if they can't create people, animators can still create new tricks. Like "particle systems." This cool technique breaks up images of people or objects into small pieces. Pacific Data Images used it in another Michael Jackson video, "Remember the Time." As the singer twirled around, the animators made him seem to dissolve into dust!

And the future promises even more computer magic. So the next time you're watching TV or a movie, and you see an actor go through an amazing transformation, take a close look and ask yourself: Is it real, or is it animation? ♦

In the movie Star Trek VI, a shape-changing alien has made herself look like Captain Kirk.



STAR WARS

Dear CONTACT,

In the TNT Newsblast titled "Star Struck" (April '92), you said that no one has ever been hit by a meteorite. But an exhibit in the Smithsonian Museum of Natural History in Washington, DC, says something different. It says that in 1954 a woman from Alabama was bruised by a meteorite that crashed through her roof. Who is right?

Sara Sandker
Kansas City, MO

Oops! The Smithsonian Museum is right. Fortunately, the Alabama woman wasn't seriously injured. But don't panic! The Astronomical Society of the Pacific says only one person in North America might be struck every 180 years.

JUST SAY WHERE!

Dear CONTACT,

In your April '92 issue, you had a TNT Newsblast titled "Scratch and Sniff." It was about drug-sniffing dog trading cards. In the article you said they weren't available in stores, but you never mentioned how to get them. Please tell me!

Amy Chen
Brea, CA

The only way to get cards of the drug-sniffing dogs is to have a U.S. Customs agent visit your school. Your teacher can arrange a visit by calling the local U.S. Customs office. As part of a talk about drugs, agents give the cards away. Sorry we didn't say this in the article, Amy.

RUNNING IN CIRCLES

Dear CONTACT,

I was reading "Spud Busters" in the May '92 issue. I was motivated to run. So, I ran around the house until I got tired. I'm a new subscriber and I love all of the issues so far! Thanks.

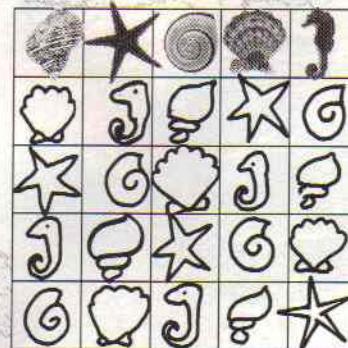
Kevin Samuel
Cantou, IL

That's great, Kevin! We're glad you were jogged into action. Next time you feel like being a spud buster, try doing some of the exercises we suggested. Good luck fighting the urge to be a couch potato!

SEA FOR YOURSELF

Dear CONTACT,

I found a different solution to your "See Creatures" puzzle (June '92). This is what I got:



Deb Schaffer
Englewood, CO

Thanks to all our readers who wrote us about another solution. We were surprised there was a second way to see the creatures.

WE WANT MAIL!

Dear Readers:

We love hearing from you. Your questions and ideas help us make CONTACT a better magazine. So why not drop us a line? We can't answer every letter, but we do read them all. Send your mail to:

3-2-1 CONTACT: Letters
P.O. Box 40
Vernon, NJ 07462



The Top 10 Myths About Christopher Columbus and His Voyages

*"In fourteen hundred and ninety-two,
Columbus sailed the ocean blue."*

We know that for sure about Columbus. Yet there are lots of legends and stories about him and his voyages that many people think are true—but aren't.

For the 500th anniversary of Columbus's first trip to America, we've dug up some Columbus myths for you—and the facts to set the record straight.

By Renée Skelton

1

Everyone But Columbus Thought the World Was Flat

You remember those old stories: Columbus sailed across the sea to prove that the world was round. Actually, he sailed to find gold, spices and silks in Asia. Sure, some people still thought the world was flat. They believed a ship that sailed too far would slip off the edge.

But by 1492, most educated people—Columbus among them—knew the world was round. What they didn't know was how big it was—or where all the land and water was. But only Columbus risked his life to prove the world was round.



2

Columbus Didn't Know Where He Was Sailing

Columbus didn't just point his ship west and sail until he bumped into land.

For one thing, Columbus stopped first at the Canary Islands. The islands were a Spanish colony about 800 miles off the coast of Portugal. This was a familiar trip. After the Canary Islands, Columbus was in unknown waters. But simple instruments let him keep track of where he was.

A compass told the direction he was sailing. To measure speed, he used a long rope tied with knots at equal spaces. A log was attached to one end of the rope. The crew threw the log overboard as the ship sailed. Then they saw how many knots slipped over the railing in half a minute. (The only timer was an hourglass.) They figured their speed in "knots"—a speed term still used by ships today.

Knowing his speed, Columbus had some idea of the distance he traveled each day. Instruments also helped him figure out his latitude—the north-south position.



3

Columbus Sailed With a Crew of Criminals

Columbus had a crew of 90. Only four were criminals. The voyage was dangerous, but the convicts were happy to go along. The king and queen had promised to excuse all of them from punishment when they returned from the trip.

Most of Columbus's men were experienced sailors from Palos, a city in Spain. It wasn't easy for Columbus to gather his crew. Most sailors in Palos thought this voyage was a crazy idea.

Things changed when Columbus became friends with an important local man named Martin Alonso Pinzon. When Pinzon agreed to go along, as captain of one of Columbus's three ships, other sailors from Palos also agreed to sign on.

4

Columbus Reached America

Well, yes and no. Yes, he reached the northern coast of South America—the area we know as Venezuela. But he never set foot on North America.

On October 12, 1492, Columbus landed on an island he named San Salvador. This is one of a group of islands stretching from the southeastern coast of Florida to Cuba. But historians and geographers don't know exactly which island it is.

They are sure that Columbus never saw North America. The winds blew him from the Canary Islands to the Caribbean Sea. There, he landed on or sailed past most of the major islands. He also explored the coast of Central America.

5

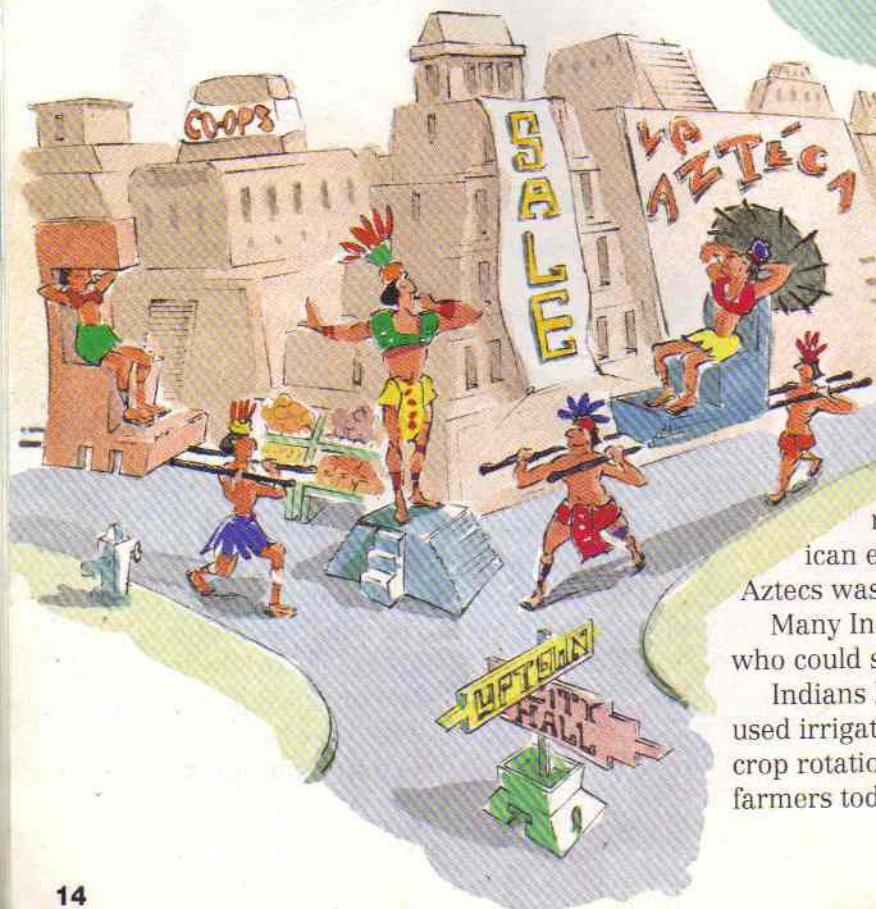
Columbus Discovered America

To discover something, you have to get there first. And Columbus didn't get to America first. When Columbus came ashore on San Salvador, members of the Taino tribe were waiting to meet him.

No one knows who really discovered America. But chances are, they were Indian. The Indians came to America between 35,000 and 40,000 years before Columbus. They were Asian hunters who crossed over from Siberia to Alaska. After thousands of years, the Indians spread throughout North and South America.

Columbus probably wasn't even the first European to reach America. Many historians think the Vikings reached North America around the year 1000. And there are tales of Irish monks who sailed to North America in small boats centuries before that.

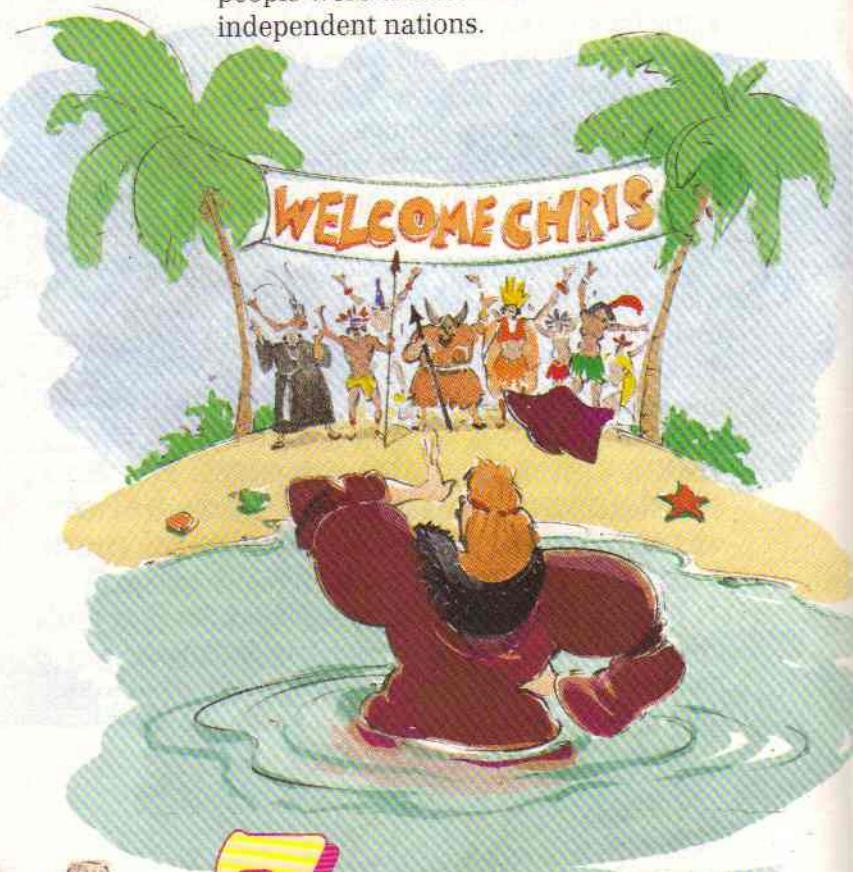
But Columbus's voyages were the first to be widely known. And he was the first to return again and again to America.



6

When Columbus Arrived America Was Unpopulated

Not at all. The tiny islands on which Columbus first landed were not crowded. But in all of the Americas, there were as many as 70 million people. And those people were divided into thousands of independent nations.



7

The Indians At Columbus's Time Were Primitive

Many tribes in those days had a simple way of life. But some had advanced civilizations, especially the Mayas, the Aztecs and the Incas of Central and South America. For example, the Mayas had a system of mathematics and an accurate calendar. The Incas built a vast system of roads and bridges to connect their South American empire. And in Mexico, the capital city of the Aztecs was bigger than any European city of that time.

Many Indian tribes had written languages and healers who could set bones and do surgery.

Indians hunted for food. But most were farmers. Some used irrigation to grow crops in dry lands. Others used crop rotation to keep soil healthy. This is still done by farmers today.

8

All of Columbus's Ships Returned to Spain

The *Niña*, *Pinta* and *Santa María* all sailed from Spain on Columbus's first voyage. But only the *Niña* and *Pinta* made it back home. The *Santa María* was wrecked on Christmas Eve of 1492 off the Caribbean island of Hispaniola.

That night, the crew was tired and almost everyone on board went to sleep. The helmsmen, who was steering the ship, was sleepy, too. So he told one of the young boys on board to hold the wheel steady while he took a nap. (Boys often went along on ships to do chores and learn the ropes.)

A bit after midnight, the *Santa María* hit a reef. The crew abandoned ship. But they got to shore and used some of the ship's wood to build a fort. While his men stayed on the island to search for gold, Columbus left on the *Niña*.

9

Columbus Only Went to America Once

Columbus's first voyage was his most famous. But he made three others.

In 1493, Columbus went on his second voyage—just six months after returning from the first. During this voyage, Columbus set up the first Spanish colony in the Americas, on Hispaniola.

In 1498, Columbus made his third voyage. He reached the coast of South America. Unfortunately, Columbus also got into arguments with the settlers on the island of Hispaniola. They said he wasn't loyal to Spain. He returned to Spain in chains.

But by 1502, Columbus had cleared his name. Then he took off on his fourth voyage. During this trip, he sailed along the coast of Central America. Columbus returned to Spain in 1504.



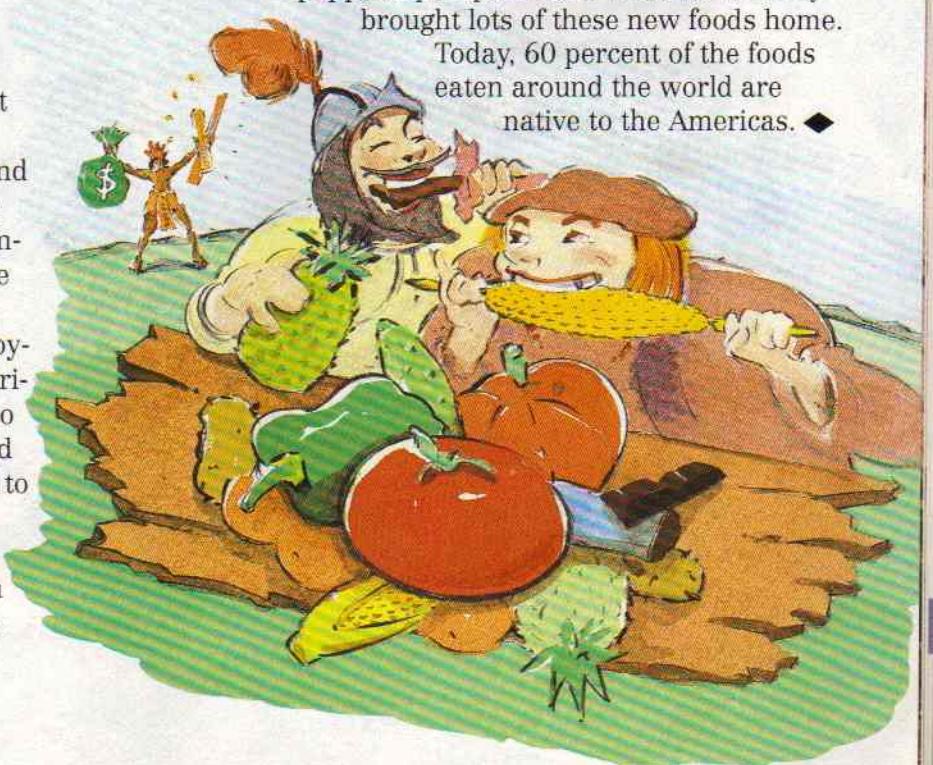
10

Europe Just Got Gold From Columbus's Trips

Thanks to Columbus's voyages, gold and silver poured into Spain. Columbus never found them. But later explorers did.

The opening of the New World brought other benefits to Europe. For the first time, Europeans tasted pineapples, sugar-cane, chocolate, potatoes, tomatoes, corn, peppers, pumpkins and cucumbers. They brought lots of these new foods home.

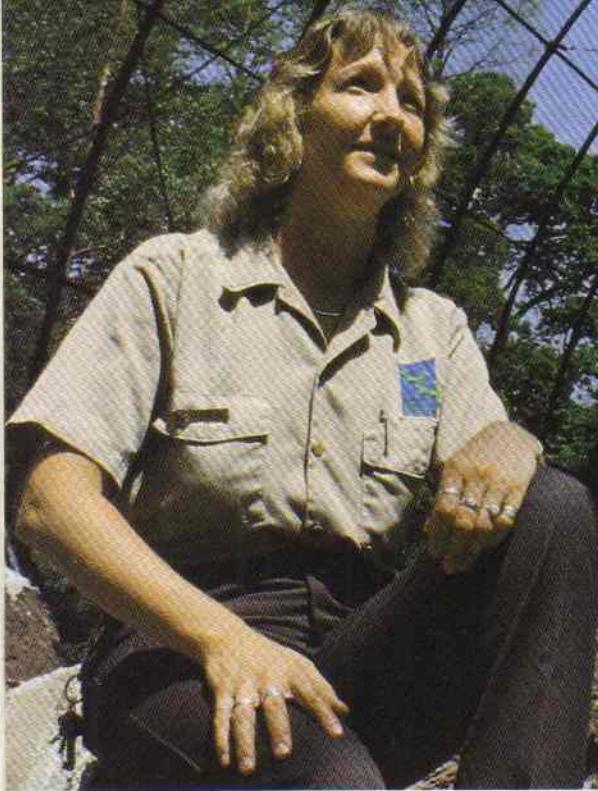
Today, 60 percent of the foods eaten around the world are native to the Americas. ◆



HANGING IT

By Eric Weiner

PHOTOGRAPH BY MICHAEL GOLDMAN



Birdkeeper Sue Maher hangs out with penguins, cormorants and gulls in an open-air aviary at the Bronx Zoo. The small photo is a cock-of-the-rock, named "C.C."



FOLLICLE MITES

You can't see them. But they may be right in front of your eyes. These worm-like creatures are called follicle mites. They hide out in some people's eyelash roots. Don't look for them in a mirror—they're invisible without a microscope.

Mites live head-down in eyelash follicles (the tiny holes in your skin that hairs grow out of). They use eight clawed-feet to hang on to the lashes. Late at night, when a person's eyes are closed, the mites crawl out to find another home or maybe a mate.

So next time someone asks, "What's bugging you?" you *might* have a lot to talk about.

WOODWORM BEETLE

This bug-eyed furniture beetle, magnified here 15 times, looks like it could star in *Alien 4*. But it's only about five millimeters long. The creature is really a beetle larva—one stage of life a beetle goes through. It's like the caterpillar stage of a butterfly's life.

The furniture beetle lives in your wood furniture. As it munches its way out of the wood, it leaves behind a trail of sawdust. Look closely at your furniture and you may see the dust and the tiny round holes that the beetles escaped from.

Eventually, this creepy worm becomes a six-legged beetle. Then it crawls or flies around the house searching for a good wood place to deposit its eggs. Of course, if all the furniture is plastic, it's in a lot of trouble!



PHOTO © DAVID SCHARF/PETER ARNOLD

Curtain Up!

Here's a Chance to Be a Star at School Next Year!

But First Try This Word Search!

PLAY SEARCH

"All the world's a stage!" Those words are from a play by a famous writer. Can you figure out who it is? First, look at the words in the Word List on the next page. Then find and circle them in the puzzle. Words can go up, down, across, or diagonally. The leftover letters will

give you the first letter of the writer's first name and his entire last name.

The answers are upside down at the bottom of the page. (No fair peeking until you've first tried the puzzle!) Then take a peek at the message on the next page. Show it to your teacher. It may make you a hero—and a star—in your classroom!



W	M	Y	S	T	E	R	Y	S
S	S	S	T	A	G	E	S	P
S	E	T	H	H	N	A	U	O
E	N	E	G	D	O	N	S	R
M	E	X	I	R	I	R	P	P
U	C	I	L	A	T	O	E	S
T	S	T	T	M	C	T	N	T
S	K	R	O	A	A	C	S	O
O	U	E	O	S	C	A	E	L
C	P	E	F	A	T	R	E	P

Answer: _____

CALLING ALL STARS!



Here's a chance to act up in class—and your teacher will love it! If you are going to be in third or fourth grade next September, you can help your teacher get hold of an exciting performing arts kit called "Curtain Up!". So be a star with a third or fourth grade teacher in your school. Just show the teacher this ad and give the coupon to him or her to fill out for a free Curtain Up! program.

WORD LIST

Act	Mystery
Action	Plots
Actor	Props
Costumes	Scenes
Curtain Up	Set
Drama	Stage
Exit	Suspense
Footlights	



W. (for William) Shakespeare



ANSWER:

Created by the Children's Television Workshop for



Ronald McDonald
Children's Charities®
Established in Memory
of Ray A. Kroc

Free For Your Teacher

Curtain Up! is a complete language and performing arts kit brought to you by the Ronald McDonald Children's Charities and created by Children's Television Workshop. The teaching package includes three fresh, fun and easy-to-perform plays written especially for third and fourth graders. The plays are themed to heroes and heroines—from little-known legends to "heroes" who may be right in your classroom!

Besides the three plays, there's a teacher's guide to make Curtain Up! a success; a giant full-color poster; and an audio cassette. One side has original music and sound effects for one of the plays. The other side has a very special mystery "radio" play to help improve students' listening skills. If you'd like your free Curtain Up! kit, just fill out the coupon below.

YES! I am a third or fourth grade teacher and I'd like a free copy of Curtain Up!—the performing arts kit for my classroom. I understand it will arrive in time for the beginning of the 1992-'93 school year. I also understand that the supply of kits is limited and will be sent out on a first-come, first-served basis.

(Please print all information.)

Teacher's Name

Grade(s) Taught

Address

School

Teacher's Signature

Mail Coupon To:

Curtain Up!
CTW
One Lincoln Plaza
New York, NY 10023

THE TIME TEAM

The Creature

By Curtis Slepian

"Weird world!"

"Tell me about it!"

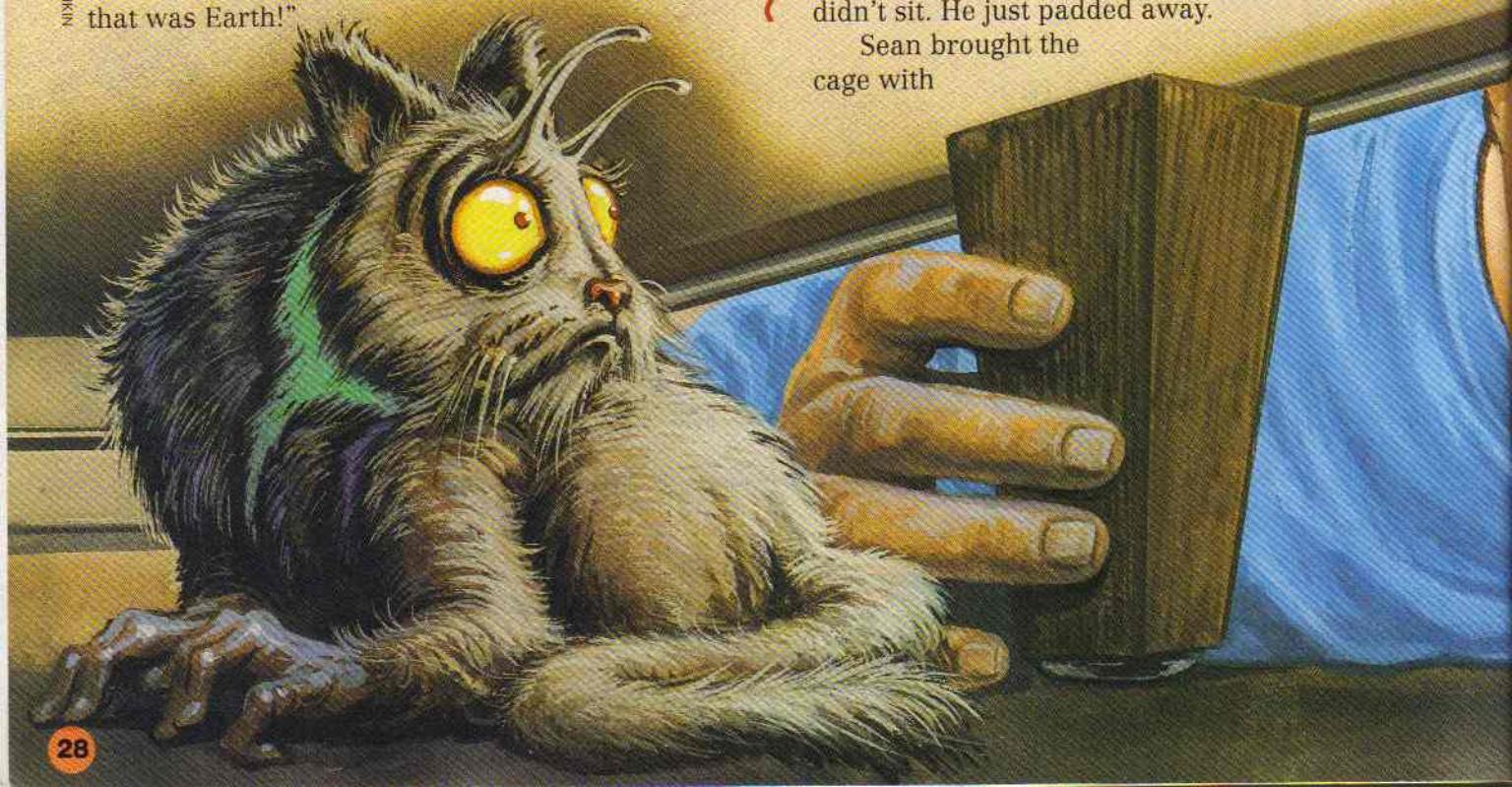
Sean Nolan and Jenny Lopez had just used their time machine to beam into an unknown place. It was too dark to see anything, but the air had an unearthly smell. The teens heard a blood-curdling howl in the distance. Then they heard something coming close. It was making a whining sound unlike anything they had ever heard.

"Let's book it out of here," Sean gulped. Jenny frantically hit the button on her tachyon machine—a science fair project that allowed the teens to travel through time. Instantly, they returned to Sean's living room in the present.

"I wonder if that was Earth in the past or the future," said Sean, dropping down on the couch.

Jenny said, "I wonder if that was Earth!"

ILLUSTRATIONS BY BOB LARKIN



That moment, Sean's dog, Algar, bounded into the room and began to growl and bark at Sean's feet.

"Hey, what's wrong, Algar?"

Sean moved Algar back and looked beneath the couch. "YOWWW!"

The Thing Under the Couch

Sean fell backwards and scrambled to his feet. "There's something under the couch!"

They pushed the couch aside. Huddled on the floor was the oddest animal they had ever seen. It was a cross between a cat and a monkey. Thick, spiky hairs grew from above its huge yellow eyes. It was making clicking sounds.

"What is it?" asked Sean. "And how did it get in my house?"

Jenny thought for a moment. "I'll bet we brought it back with us from our time trip. It must have been nearby when we beamed home."

"Do you think it's dangerous?"

"I don't know," answered Jenny. "But we've got to make sure your parents don't see it."

"Yeah. I'd have a tough time explaining where it came from." Only the teens knew about the tachyon machine—and they wanted to keep it that way.

From his basement, Sean carried up an old rabbit cage. He easily trapped the animal inside it.

As the teens stared at the creature, Algar stuck his face near the cage. The alien animal brushed the dog's nose with its whiskers.

"Algar!" shouted Sean. "Get away from there!"

Algar didn't respond. "Algar!" Sean rushed up and pulled the dog away. "Sit, Algar!" Algar didn't sit. He just padded away.

Sean brought the cage with

the animal back to the basement. His parents rarely went down there. Not knowing what the animal ate, Sean left it a bowl of water and some dog food.

Upstairs, Jenny was getting ready to leave. "I'll call you later," said Sean. When she left, Sean returned to the basement to look at the animal. It looked friendly. Sean took a chance: He stuck his hand through the cage and petted it. Immediately, he felt a tingling and yelled in surprise. But his hand was okay. He watched the creature eat the dog food and petted it again.

The next day in school, Jenny bumped into Sean. "Hey, you forgot to phone yesterday."

Sean was puzzled. "I didn't promise to call."

"Never mind. I'll come over after school."

"Cool," said Sean, rushing to his next class.

After school, Sean went to feed the animal. He picked it up. "Good boy—or girl—or whatever."

Sean called for Algar, but he didn't come. "He's acting nutty," thought Sean, going to change.

"Where did I put my sneakers?" he wondered. Finally, he found them in the closet, where they always were. "I must be losing it," he murmured.

The doorbell rang. "Hi, Joannie—I mean, Jenny. What are you doing here?" he asked.

Jenny rolled her eyes. "I told you at school I was coming over to see...it."

"You did? Well, okay."

Downstairs, Sean opened the cage and took out

the animal. Jenny got frantic: "Don't pick it up!"

"Relax," said Sean. "He's tamer than my dog, Alex, er, Allen, er, Algar."

"Is something wrong with your brain? Hey, that creature is pretty cute. Let me take it home."

Jenny took the animal home in a large book bag. She hid it in her closet so her parents wouldn't find it. After studying for next day's history test, she brought the animal some food. Jenny petted the creature, touching its whiskers. "Hmmm. It makes my hand tingle. Must be a skin allergy."

The next morning, Jenny woke up with something gnawing in the back of her mind—like an itch you can't scratch. Later, in history class, the teacher handed out the test papers. Then Jenny knew what was bothering her: She couldn't remember what she had studied the night before! Her mind was a blank. And so was the test paper she handed in.

At home after school, feeling bad about the test, Jenny hugged the animal. She decided to turn on the TV, but couldn't remember where she had put the remote control.

"Well, I'll get something to eat." ☺



As she left her room, she got confused. "Where's the kitchen?" she wondered.

Suddenly, she heard a voice calling out her name. The voice sounded familiar, but she couldn't place it. Jenny saw a strange woman approaching. Then it dawned on her. The woman was Jenny's mother!

Jenny held back a cry. She had forgotten what her mother looked and sounded like! What was going on?

Why had her friend...what was his name?... Sean?...forgotten so much stuff lately? And now she was forgetting things, too. Jenny became very frightened.

She went back to her room and picked up the animal. Brushing its spiky whiskers she felt the tingle again. "This weird memory loss started happening since our last time trip. Was this animal the reason? Maybe it has strange powers. Maybe it's stealing our memories!"

She got so freaked out, she thrust the animal down on her bed. With a frenzied clicking, it darted to the window and jumped out!

Jenny ran out of the house. But she was too late. The animal was gone. Panicked, she started to run to see Sean. But where did he live? Jenny's memory was blurry. She needed to ask directions to find his house. She rang the bell, and a red-haired guy answered. Oh, yes, he was Sean.

"Sean," she said, charging into the living room, "I believe that alien animal has been stealing our memories. It happens when you touch it. And the longer you touch it, the more you forget."

Forgetting to Know You

Stunned, Sean slumped into a chair. The last few days were hazy in his mind. And it was true that after Algar touched the animal, it no longer answered to its name. "Where's the creature?"

Jenny became embarrassed. "It escaped."

The two teens combed the neighborhood, but couldn't find the creature. Hours later, they gave up. "We're in deep trouble," said Sean. "If people touch it, it may cause real problems. We'd better keep our eyes open for signs of it."

A week later, both teens were sitting in Mr. Fischler's biology class. Mr. Fischler came in. He

usually dressed neatly. But today he had forgotten to comb his hair or wear a tie.

"Well," said Mr. Fischler, "can anyone remind me what we were talking about in yesterday's class? For some reason, I've forgotten."

After class, Jenny asked Mr. Fischler if he had seen any weird animals around his house.

"Why, yes, just this morning I saw the strangest cat," replied the teacher. "It had peculiar whiskers. When I petted it, I felt the oddest tingling. I tried to pick it up, but it ran away."

Creature on the Loose

It was still loose!

Sean and Jenny were worried. If the animal caused something bad to happen, it would sort of be their fault.

They were the ones who brought it to Earth. So each day after school they searched for it in neighborhoods near and far. Nothing.

Then, a few weeks later, Sean's father was talking to his friend Bob.

When Bob said he had found a strange animal in his driveway, Sean's ears perked up. Bob said he picked up the animal and petted it.

Then he put it down. Bob got into his car and backed out of the driveway—and ran right over the animal!

"The strange thing is," said Bob scratching his head, "as soon as I put the animal down, I forgot it was even there. Like it had disappeared from my memory. I guess I'm getting old," he chuckled.

Sean said, "What did you do with the animal?"

"Oh, I buried it," answered Bob.

That evening, the teens were watching TV in Sean's house. "I guess we don't have to worry about the creature anymore," said Jenny.

The news came on: "In a funny local story, this afternoon, the city's mayor showed up at a fund-raising ceremony. But it seems he completely forgot the speech he was supposed to make..."

Jenny and Sean shot horrified looks at each other. "Maybe what Bob killed wasn't the creature!" said Jenny.

The newsman continued, "...But then the mayor remembered that he had left the speech at home in another jacket. Ha!Ha! In other news..."

"This was some experience," sighed Jenny.

Laughed Sean, "It's one I won't forget!" ♦



BASIC TRAINING

Programs For Your Computer

BIRDKEEPER'S ASSISTANT

For IBM and APPLE II computers

It's tough taking care of birds! They can be picky eaters. So when they get sick, you've got to make sure they eat their medicine. With this program, you've got one sick parrot! He's flying around above your head, and you've got to toss him a meatball filled with medicine. To toss it, hit the space bar. If your timing is right, the parrot will gobble it.

When the program starts, you set the speed for the game. The higher the number, the slower the parrot flies. Try 50 to start. The program is written for the IBM PC. To run it on an Apple II, set ID=2 in line 100. If your computer only displays 40 columns, set SW=40 in line 100 as well. Also, in line 310, the print command has three spaces between the quotation marks.

```
100 ID = 1: SW = 80
110 IF ID = 1 THEN GOSUB 360
120 GOSUB 510
130 INPUT "PROGRAM SPEED": SP
```

```
140 IF SP < 0 THEN 120
150 BS = INT(RND(1) * 10)+1: BV =
INT(RND(1) * 10)+1
160 GOSUB 510
170 PY = 23: PX = INT(SW / 2):
GOSUB 330: PRINT "- + -";
180 PY = 22: PX = PX + 1: GOSUB
330: PRINT "o";
190 PY = 24: GOSUB 330: PRINT
"";
200 TA = 0: SC = 0
210 T = T+1: IF T = 3200 THEN
T = 1
220 BX = INT(BS * T): MD = INT(BX /
(2 * SW)): BX = BX - (2 * SW * MD)
230 IF BX >= SW THEN BX = 2 * SW -
BX
240 IF BX = 0 THEN BX = 1
250 IF BX > SW - 3 THEN BX = SW -
3
260 BY = INT(4 + (3 * SIN(T * BV)))
270 PX = BX: PY = BY: GOSUB 330:
PRINT "^O ^"
280 GOSUB 540: IF BS <> "" AND
TA = 0 THEN GOSUB 370
290 IF TA = 1 THEN GOSUB 410
300 FOR PE = 0 TO SP * 10: NEXT
310 PX = BX: PY = BY: GOSUB
330: PRINT " "
320 GOTO 210
330 ON ID GOTO 340, 350
340 LOCATE PY, PX: RETURN
350 VTAB PY: HTAB PX: RETURN
360 RANDOMIZE (TIMER):
RETURN
370 GOSUB 620: MT = 0: MX =
INT(SW / 2) - 1: MY = 22
380 MV = 4: MA = .5: TA = 1: SC =
SC + 1
390 PX = MX: PY = MY: GOSUB
330: PRINT "M";
400 RETURN
410 PX = MX: PY = MY: GOSUB
```

```
330: PRINT " ";
420 MY = INT(MY - MV): MV = MV -
MA
430 IF MY > 22 THEN TA = 0:
RETURN
440 PX = MX: PY = MY: GOSUB
330: PRINT "M";
450 IF ABS(MY - BY) > 1 THEN 470
460 IF ABS(MX - BX) < 2 THEN 480
470 RETURN
480 GOSUB 620: GOSUB 510:
PRINT "THE PARROT GOT
THE MEATBALL!";
490 PRINT "YOU GOT THAT IN":
SC: "TRIES"
500 END
510 ON ID GOTO 520, 530
520 CLS : RETURN
530 HOME: RETURN
540 IF ID = 1 THEN 590
550 X = PEEK(49152)
560 IF X < 128 THEN BS = "";
RETURN
570 BS = CHR$(X - 128)
580 X = PEEK(49168): RETURN
590 BS = INKEY$:
600 FOR X = 1 TO 15: Q$ =
INKEY$: NEXT
610 RETURN
620 IF ID = 2 THEN PRINT CHR$(7)
630 IF ID = 1 THEN SOUND 440, 1
640 RETURN
```

SEND US YOUR PROGRAMS

If you've written a program you'd like us to print, send it in. If we like it, we'll print it and send you \$25. Include a note telling us your name, address, age, T-shirt size and type of computer.

All programs must be your own original work. We cannot return programs. Please do not send disks.

Send your programs to:



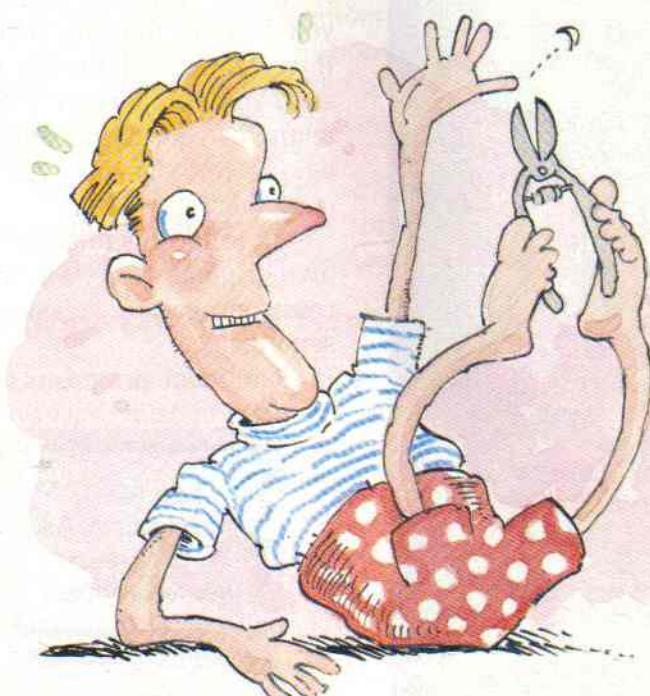
FACT



Stroking a cat's fur nine billion times would produce enough electricity to light a light bulb for one minute.



All 1,500 of a fly's taste buds are located on its feet.



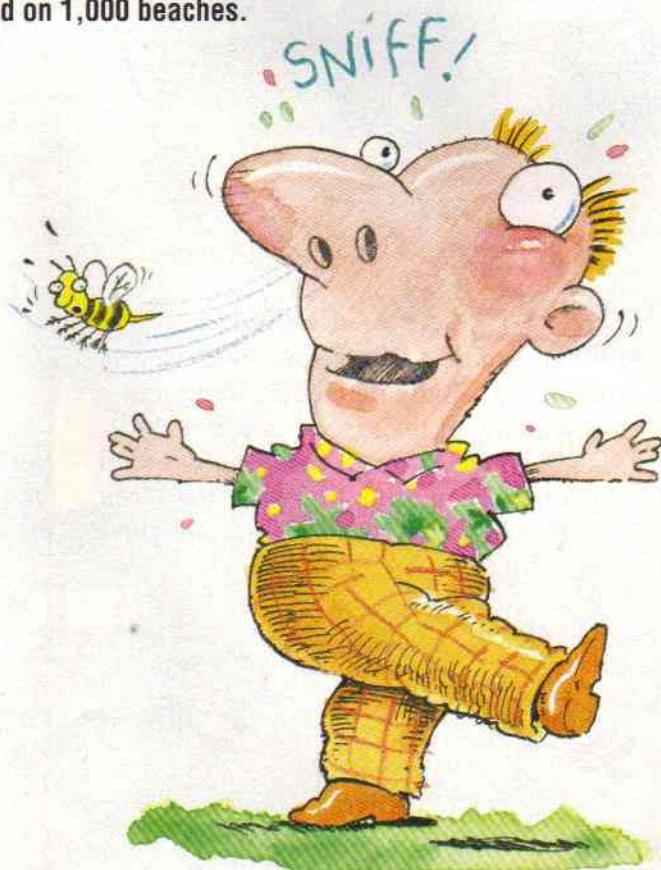
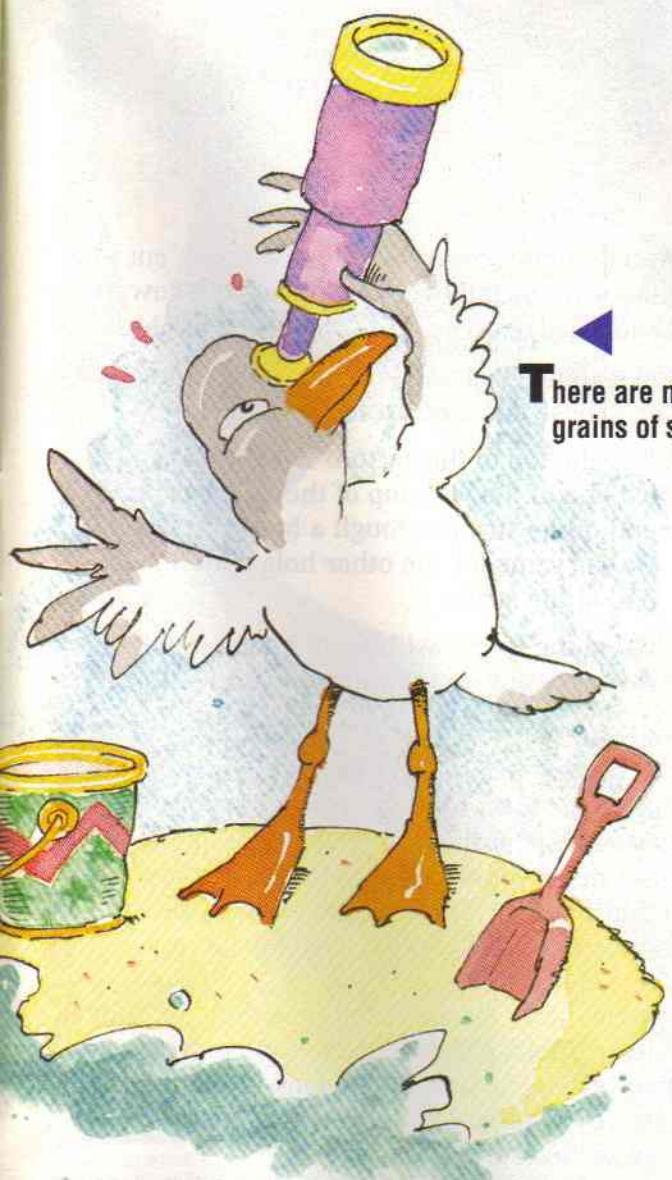
Fingernails grow four times faster than toenails.

IDS

In a 24-hour orbit around Earth, astronauts see 16 sunrises and 16 sunsets.

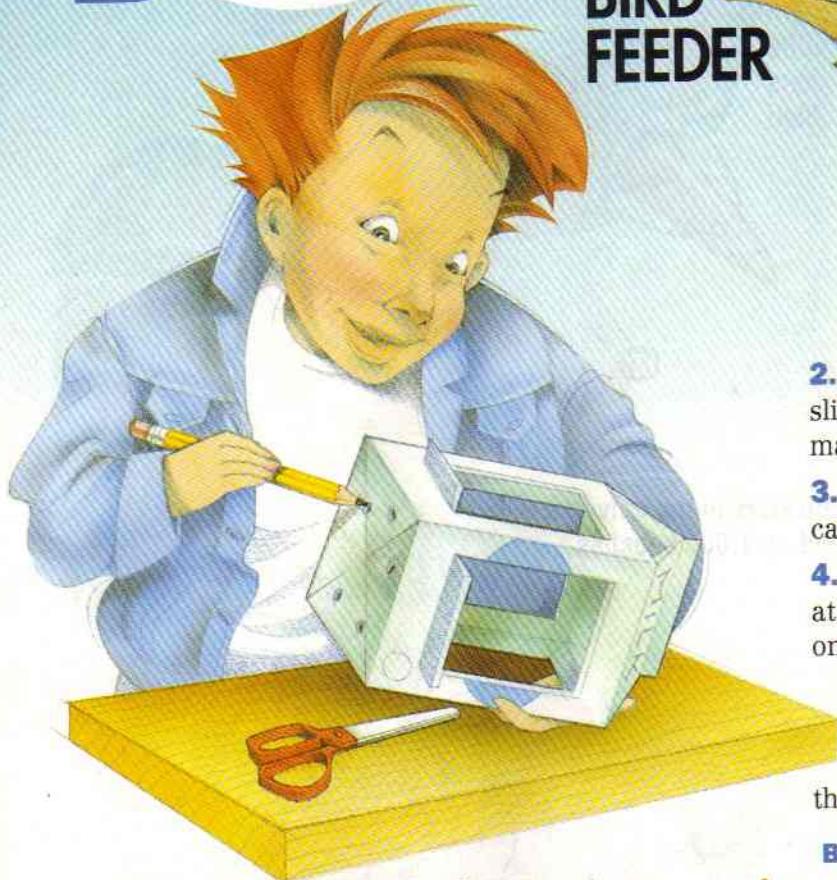


There are more stars in the universe than grains of sand on 1,000 beaches.



Normally, people breathe air into their noses at a rate of four mph.

For the Birds



BUILD YOUR OWN BIRD FEEDER

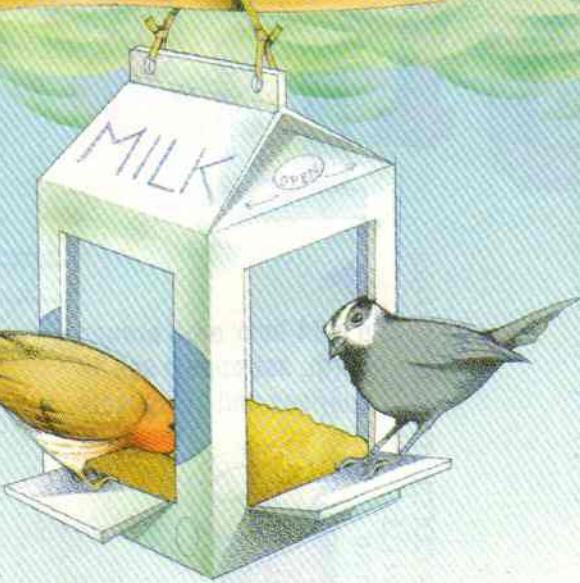


ILLUSTRATION BY AMY NINIS

You don't have to be a zoo keeper to hang around birds. Build a hanging feeder! Hang one outside your window or on a tree branch. Then you'll be able to watch birds all year round—even during the winter. If you think this is for the birds, you're right! They'll really appreciate it, and you'll enjoy watching them eat.

What You Need

- an empty half-gallon milk carton
- a ruler
- a two-foot-long piece of string
- scissors

What To Do

1. On all four sides of the carton, cut out little windows starting about two and a half inches from the carton's bottom. The windows should each be about 2 1/2 inches wide and three inches high.

2. At the bottom corners of each window, cut a slit about 1/2 inch down. Fold the carton down to make four ledges. The birds will perch on these.

3. Poke about six small holes in the bottom of the carton. These allow rainwater to drain.

4. Close the top of the carton. Then make a hole at each end of the very top of the milk carton. Pull one end of the string through a hole and knot it. Do the same for the other hole with the other end of the string.

5. Fill the feeder with seed. Then hang it up by the string outside your window or from a branch.

Bird Feed

Do you eat like a bird? Then you must be nuts about seeds! Most birds love seeds, especially sunflower seeds. Put these in your feeder, along with a grain called proso millet and cracked corn. (You can find them at your local pet store.) This mix attracts chickadees, nuthatches, finches and other birds.

Not all birds like to go out on a limb for a meal, however. Some, like cardinals, titmice, wrens and blue jays, eat just a couple of feet off the ground. To attract them, put food on a tree stump or on a dish with holes (for draining).

Birds like sparrows really chow down—down close to the ground, that is. For them, scatter seeds on the earth or put the seeds on a flat dish. However you feed birds, remember you must keep the feeder clean to avoid giving the birds diseases. Remove wet or soggy seeds and clean up waste on the ground.

THE ADDAMS FAMILY IS A SCREAM!

By Beth Chayet

They're ooky and they're spooky. In fact, they're altogether kooky. This weird family even has spiders as pets! Can you figure out how many pet spiders Pugsley, Gomez and Wednesday have?

Me Lurch.
Me have 21
pet spiders.

Gomez here.
I have three more
spiders than
Pugsley.

I'm Pugsley.
I have eight fewer
spiders than
Lurch.

I'm Wednesday.
I have one less
than half as many
pet spiders as
Gomez!
Gomme!

can worm your way out
Draw a line from the
fish to the worm

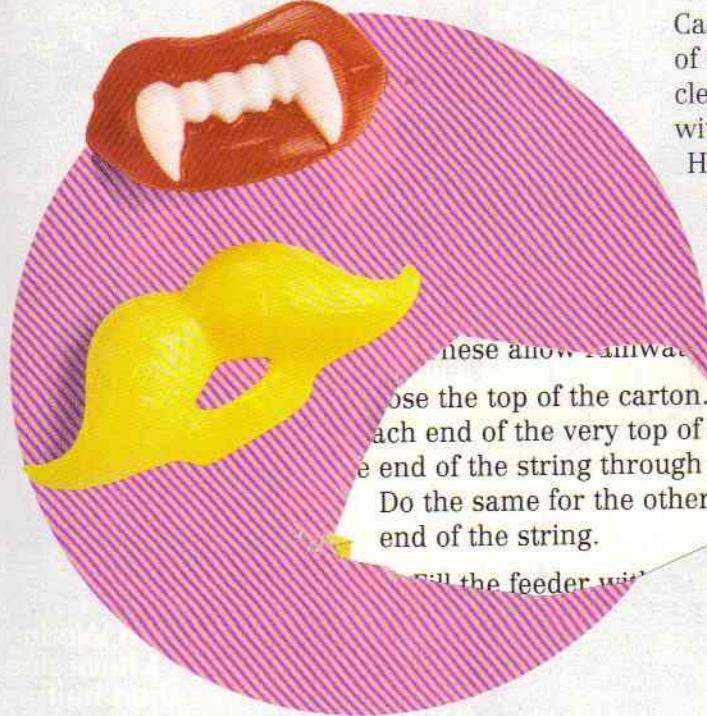
Will you please
get off my
back already!



DON'T BE TRICKED BY OUR

WAX MOUTHS COURTESY OF GLENN CANDIES © 1988

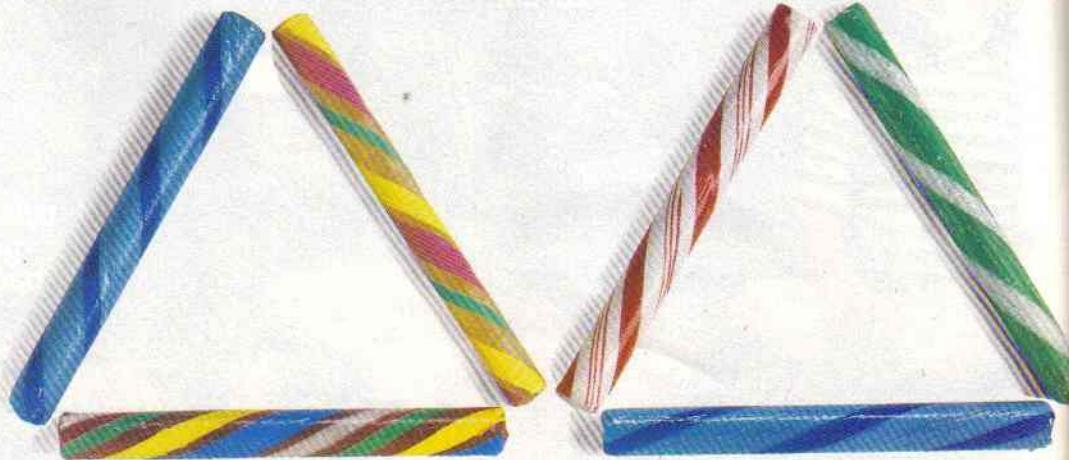
S Q U A R E O N E S T I C K Y R E A T S



... have to be a z...
birds. Build a hanging feeder
your window or on a tree branch.
ll be able to watch birds all year
winter. If you think they
ill really

Pick-Up Sticks

Can you make
five triangles by
moving only three
striped sticks? Hint:
One of the five trian-
gles will be bigger
than the others.



By Beth Chayet

You've Said a Mouthful

These waxy mouths follow a wacky pattern. Can you guess which one of the mouths in the circle goes in the space with the question mark?

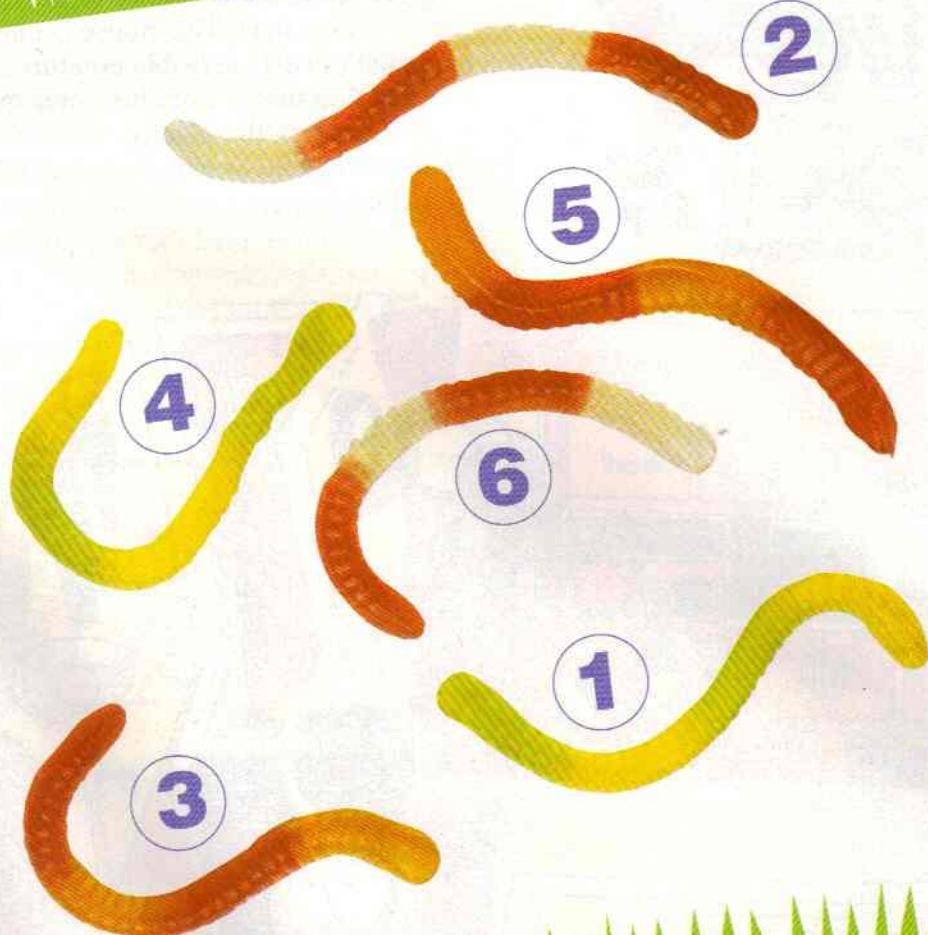
Hint: You'll solve the problem by sinking your teeth into it!

These allow rainwater to collect in the top of the carton. Push each end of the very top of the string through a hole in the end of the string. Do the same for the other hole at the end of the string.

Fill the feeder with birdseed.

Z Z T

S



PHOTOGRAPH BY STAN FELLERMAN

▲ Wiggle It!

See if you can worm your way out of this puzzle! Draw a line from the number on each fish to the worm with the same number. The lines can't cross each other or go outside the grass. Hint: Some of the lines will have to go the long way around.

Answers on the Did It page.



EXTRAF

By Beth Chayet

HIDDEN HORRORS

Bug alert! This house is loaded with nearly invisible creatures. Try to find the 31 horrible housemates hidden in the picture.

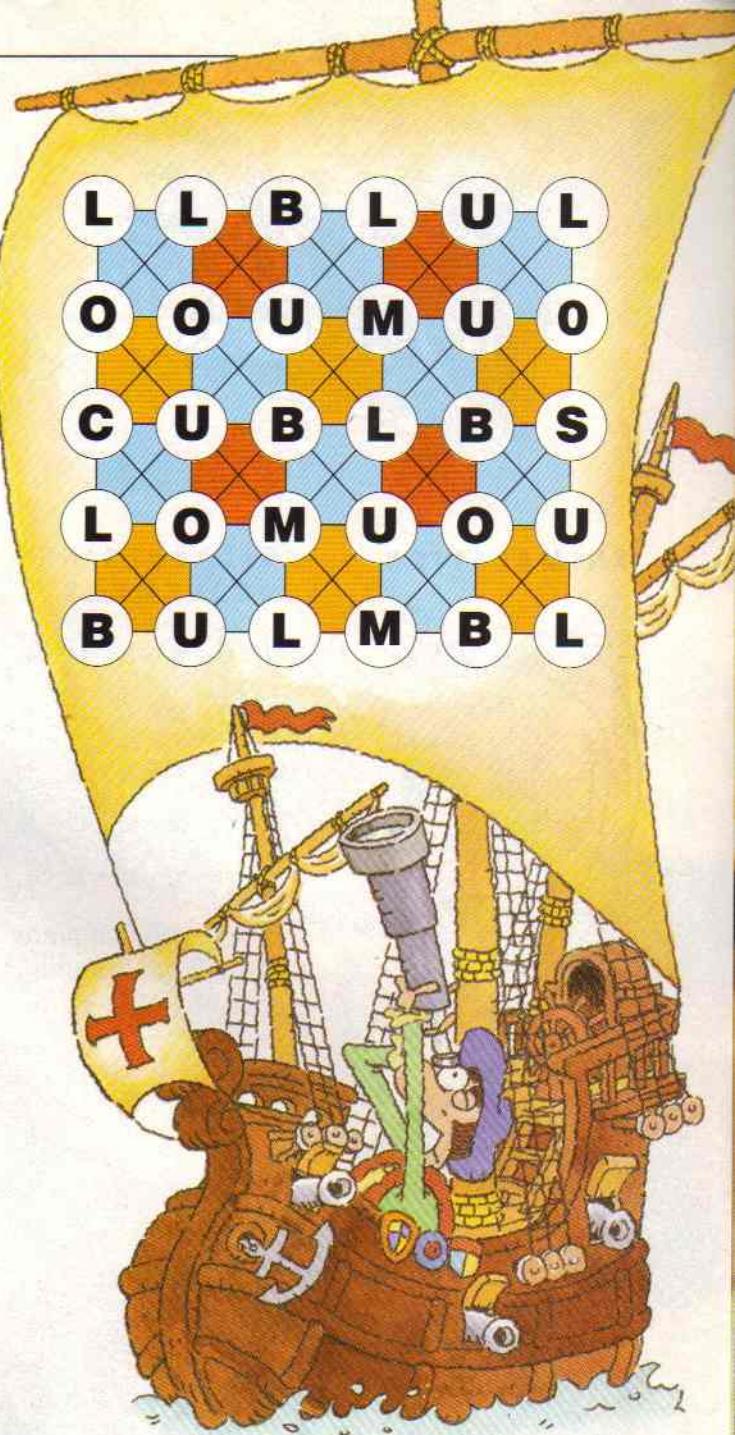
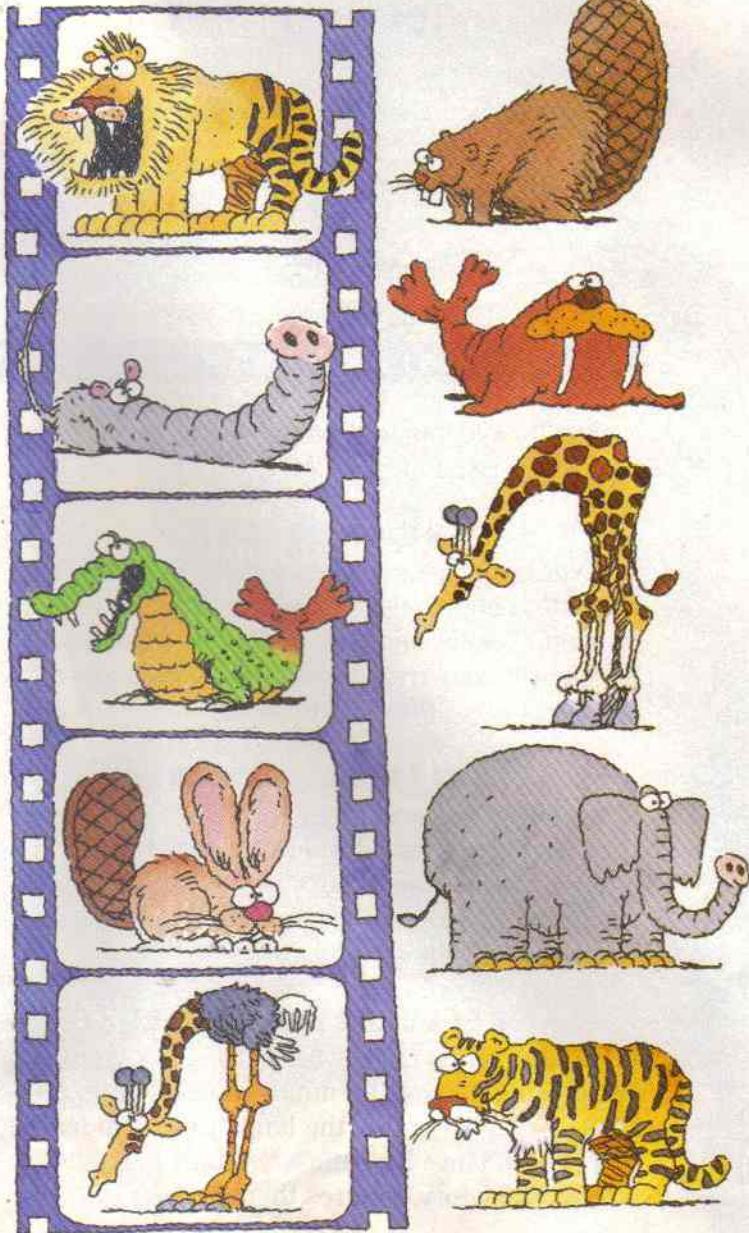
The answer is creeping on the Did It page.



ANIMALATION

Diff and Duzzy are really wild about the new video by Gums N' Noses on ATV (Animal Television). And cool! The video shows animals "morphing." In each frame on the left, one animal is in the process of changing into another animal. On the right is the animal after it has completely changed. Can you draw a line from each morphing animal to the animal it has changed into?

The answer is framed on the Did It page.



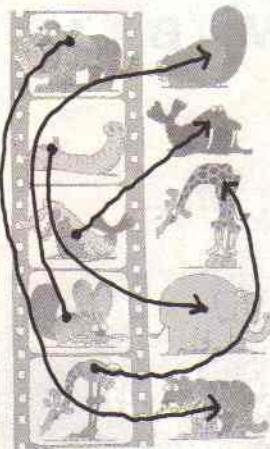
DISCOVERING COLUMBUS

This may be Chris's toughest voyage. Starting with the letter C and ending with letter S, help him to set sail across the grid to spell out COLUMBUS. By taking different paths across the grid, see how many times you can spell out his name. You can move one circle at a time in any direction. And letters can be used more than once. But you've got to land on the letters in the right order.

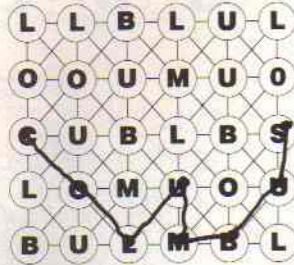
Sail to the Did It page for an answer.

Did It?

ANIMATION



DISCOVERING COLUMBUS

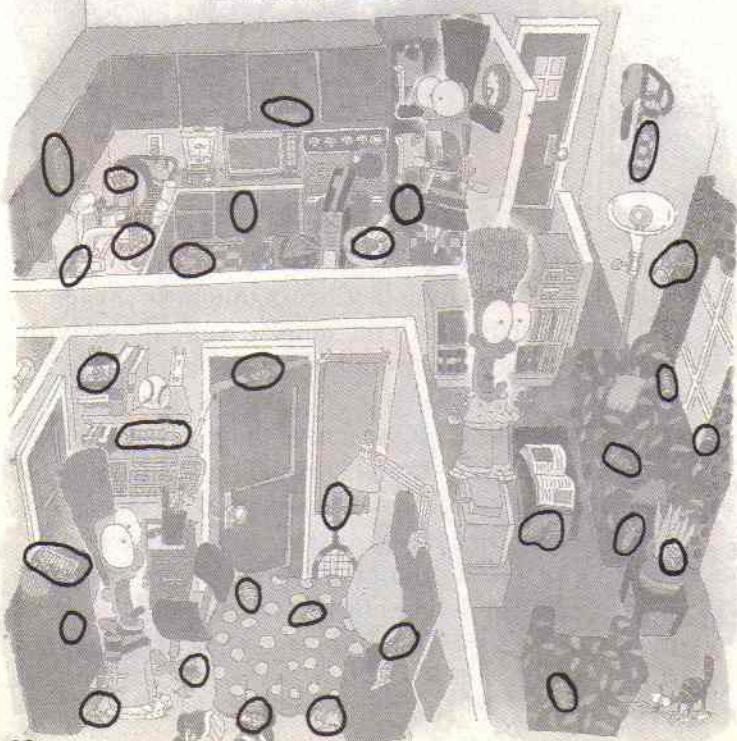


We found five paths that spell out Columbus. Here's one of them.

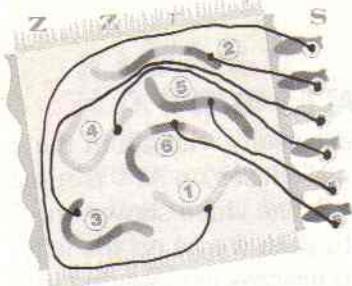
THE ADDAMS FAMILY

Pugsley: 13
Gomez: 16
Wednesday: 7

HIDDEN HORRORS



WIGGLE IT!



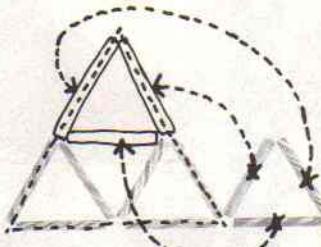
Here's one solution. You may find more.

YOU'VE SAID A MOUTHFUL



The pattern is +2, +4, +2, +4. So the mouths have 2 teeth, 6 teeth, 8 teeth and 12 teeth.

PICK-UP STICKS



Four small triangles make up the fifth triangle.

NEXT MONTH

You'll have lots to thank us for in the November issue of CONTACT:

BUGGING OUT

Ever crunch into a crispy green cricket? Or bite into a big beetle? Sounds gross? You may think so. But for some people around the world, bugs are a tasty treat. Read why insects are not only delicious—they're nutritious!

BATTERIES INCLUDED

Tomorrow's cars are going to be a gas—but they won't need any. Battery-powered cars are quieter, cheaper and cause less pollution than gas guzzlers. Get the latest news about these "electrifying" autos.

HELLO DOWN THERE!

Kookaburras. Cassowaries. Dingoes. Wombats. What do these weird animals have in common? They live in Australia, the land "Down Under." If you can't picture how these animals look, don't worry. This story pictures them for you.

AND MUCH, MUCH MORE!

If a brownie this fudgy
doesn't satisfy you,
maybe you really like vanilla.



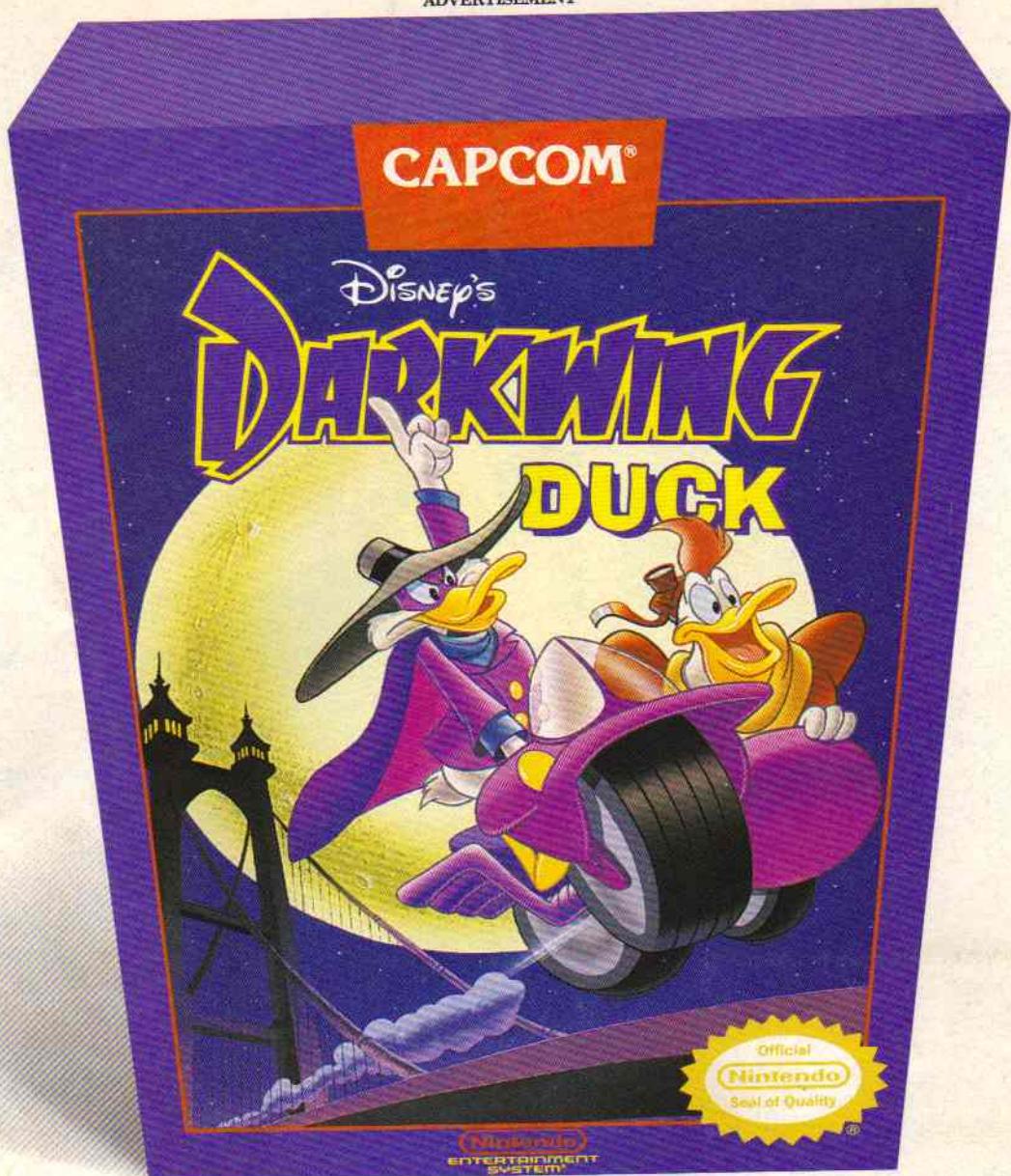
For true chocolate lovers, only Duncan Hines has both fudge in the mix and a packet of extra fudge.

So you serve up brownies so doubly fudgy, they'll really satisfy any chocolate craving.

How to bake your moist, delicious best.

Duncan
Hines®

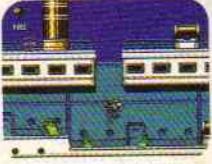
Double Fudge Brownie Mix



Only one duck can quack this case.



*Watch out for
Steelbeak's flying eggs,
or you'll be fried forever.*



*On Steelbeak's floating
crime fortress, the
danger comes in waves.*



*Better move fast, 'cause
these turtles are anything
but slow.*

F.O.W.L. has turned St. Canard into one big crimefest. Darkwing Duck's mission: cook their goose for good. Easy? Not! He must first live through 7 dangerous levels where arch enemies like Steelbeak, Quackerjack and Mega Volt await. He can't do it without you. So stop flapping around and get on the case today.

CAPCOM®

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